

MINA DE COBRE PANAMA PROJECT / PORT SITE MASS EARTH WORKS



BLAST REPORT N° 8 JAN DE NUL



Location: Punta Rincón, Colón			Estimated Blast date: March 10th, 2013		
Rock Type: Basalt			Elevation: 50.00 @ 39.00		
Blast Coordinates			Blast Coordinates		
Blast Point	North	East	Blast Point	North	East
A	995603.591	533888.577	C	995570.000	533894.320
B	995580.660	533876.080	D	995578.860	533905.490
PRODUCTION BLASTING					
N° of holes:	70		Diameter:	3.50	in
Average Burden	3.00	m	Subdrilling:	0.50	m
Average Spacing	3.00	m	Average Hole Depth:	12.10	m
Stemming:	1.80_2.10	m			
Borehole inclination:	90 °				
INITIATION SYSTEM					
Pyrotechnics detonators Dual detonator (delay surface 25 ms / delay bottom 500 ms) Trunk line and delay connectors 42ms (shock tube)					
Explosive charge:		One Charge			
Explosives types:		Shot bags with Blend (Emulsion 70%/Anfo 30% mixes)			
Type and size of primer:		Boosters 3/4 pound			
Location of primer:		Down in the hole			
EXPLOSIVES NAMES					
HIGH EXPLOSIVES	Shot bags with Blend (Emulsion 70%/Anfo 30% mixes)			4,060.00	kg
	Quantity of Shot Bags			580.00	units
PRIMER	Boosters 3/4 pound			Quantity: 70	units
INITIATION SYSTEM	Pyrotechnics Detonators (15.00 m)			Quantity: 70	units
	Pyrotechnics Detonators (18.00 m)			Quantity: 0	units
	Pyrotechnics Detonators (9.00 m)			Quantity: 0	units
	Connector non-electric 42 MS			Quantity: 10	units
	Connector non-electric 17 MS			Quantity: 10	units
	Lead in Line (1000m)			Quantity: 1	units
SUMMARY					
Maximum charge per delay		83.00	kg	Total meters drilled(m):	849.51
				Total Charge (kg):	4060.00
				Rock Volume(m³) :	7645.59
				Powder factor (kg/m³)	0.53
Comentarios					
The vibration measurement couldn't register due to technical problems with the Unit. (No memory's space to save information, probably caused by unit sensibility.					

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CHARGE TABLE

Explosive Type A						Explosive Type B				
Explosive density:		1.23	g/cc			Explosive density:		g/cc		
Explosive Diameter:		3.00	in			Explosive Diameter:		in		
Linear Charge		5.70	kg/m			Linear Charge		kg/m		
Hole	Depth	Burden	Spacing	Subdrill	Stemming	Charge			Volume	Powder Factor
ID	m	m	m	m	m	m	kg	Quantity of Shot Bags	m3	kgs/m3
647	9.7	3.00	3.00	0.50	1.90	7.76	44.00	6.00	86.94	0.51
648	9.8	3.00	3.00	0.50	1.90	7.85	45.00	6.00	87.75	0.51
649	9.8	3.00	3.00	0.50	1.90	7.92	45.00	6.00	88.38	0.51
650	9.9	3.00	3.00	0.50	1.90	7.98	45.00	6.00	88.92	0.51
651	9.8	3.00	3.00	0.50	1.90	7.94	45.00	6.00	88.56	0.51
652	10.1	3.00	3.00	0.50	1.90	8.20	47.00	7.00	90.90	0.52
653	10.8	3.00	3.00	0.50	1.90	8.85	50.00	7.00	96.75	0.52
654	10.8	3.00	3.00	0.50	1.90	8.94	51.00	7.00	97.56	0.52
655	10.2	3.00	3.00	0.50	1.90	8.26	47.00	7.00	91.44	0.51
656	11.8	3.00	3.00	0.50	1.90	9.89	56.00	8.00	106.11	0.53
657	11.8	3.00	3.00	0.50	1.90	9.90	56.00	8.00	106.20	0.53
658	11.1	3.00	3.00	0.50	1.90	9.24	53.00	8.00	100.26	0.53
659	10.1	3.00	3.00	0.50	1.90	8.15	46.00	7.00	90.45	0.51
660	10.1	3.00	3.00	0.50	1.90	8.23	47.00	7.00	91.17	0.52
661	10.0	3.00	3.00	0.50	1.90	8.13	46.00	7.00	90.27	0.51
662	10.0	3.00	3.00	0.50	1.90	8.12	46.00	7.00	90.18	0.51
663	9.9	3.00	3.00	0.50	1.90	8.03	46.00	7.00	89.37	0.51
664	10.1	3.00	3.00	0.50	1.90	8.17	47.00	7.00	90.63	0.52
665	10.3	3.00	3.00	0.50	1.90	8.36	48.00	7.00	92.34	0.52
666	10.3	3.00	3.00	0.50	1.90	8.38	48.00	7.00	92.52	0.52
667	10.1	3.00	3.00	0.50	1.90	8.18	47.00	7.00	90.72	0.52
668	11.0	3.00	3.00	0.50	1.90	9.05	52.00	7.00	98.55	0.53
669	10.4	3.00	3.00	0.50	1.90	8.53	49.00	7.00	93.87	0.52
670	11.2	3.00	3.00	0.50	1.90	9.28	53.00	8.00	100.62	0.53
671	12.4	3.00	3.00	0.50	1.90	10.45	60.00	9.00	111.15	0.54
672	12.6	3.00	3.00	0.50	1.90	10.68	61.00	9.00	113.22	0.54
673	11.5	3.00	3.00	0.50	2.00	9.45	54.00	8.00	103.05	0.52
674	11.8	3.00	3.00	0.50	2.00	9.75	56.00	8.00	105.75	0.53
675	10.6	3.00	3.00	0.50	2.00	8.59	49.00	7.00	95.31	0.51
676	11.2	3.00	3.00	0.50	2.00	9.17	52.00	7.00	100.53	0.52
677	10.9	3.00	3.00	0.50	2.00	8.86	51.00	7.00	97.74	0.52
678	10.3	3.00	3.00	0.50	2.00	8.25	47.00	7.00	92.25	0.51
679	10.3	3.00	3.00	0.50	2.00	8.32	47.00	7.00	92.88	0.51
680	10.4	3.00	3.00	0.50	2.00	8.39	48.00	7.00	93.51	0.51
681	10.4	3.00	3.00	0.50	2.00	8.41	48.00	7.00	93.69	0.51
682	11.0	3.00	3.00	0.50	2.00	8.97	51.00	7.00	98.73	0.52
683	10.6	3.00	3.00	0.50	2.00	8.63	49.00	7.00	95.67	0.51
684	11.1	3.00	3.00	0.50	2.00	9.12	52.00	7.00	100.08	0.52
685	11.7	3.00	3.00	0.50	2.00	9.68	55.00	8.00	105.12	0.52
686	13.1	3.00	3.00	0.50	2.00	11.06	63.00	9.00	117.54	0.54
687	12.0	3.00	3.00	0.50	2.00	9.99	57.00	8.00	107.91	0.53
688	11.7	3.00	3.00	0.50	2.00	9.67	55.00	8.00	105.03	0.52
689	10.8	3.00	3.00	0.50	2.00	8.77	50.00	7.00	96.93	0.52
690	10.5	3.00	3.00	0.50	2.00	8.50	48.00	7.00	94.50	0.51
691	10.9	3.00	3.00	0.50	2.00	8.90	51.00	7.00	98.10	0.52
692	11.8	3.00	3.00	0.50	2.00	9.84	56.00	8.00	106.56	0.53

MINA DE COBRE PANAMA PROJECT

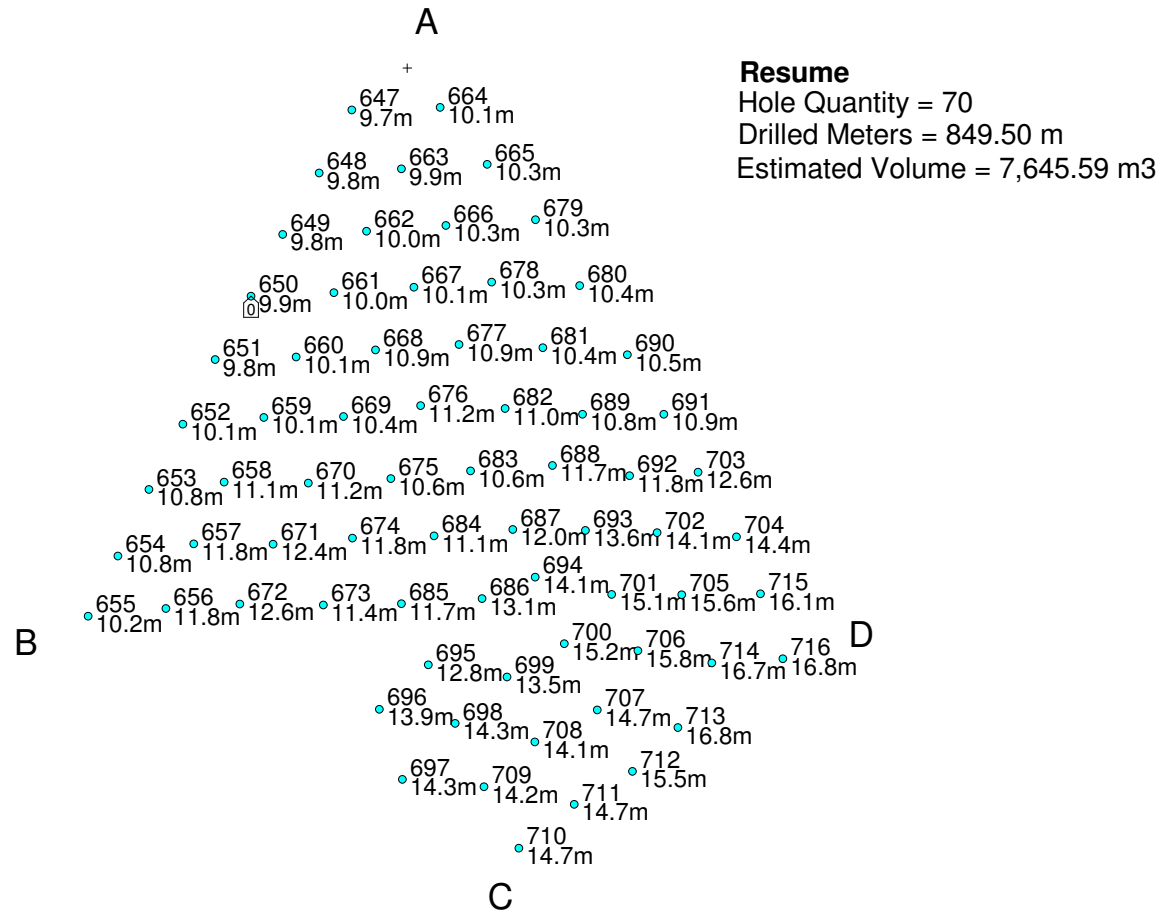
TABLE CHARGE RESUME

Number of boreholes	70	
Drilling meters	849.51	m
Meters Charged	707.51	m
Quantity of Shot Bags	580.00	
Total charge	4,060.00	kg
Blast Volume	7,645.59	m ³
Powder factor	0.53	kg/m ³
Maximum charge	83.00	kg
Average Hole Depth	12.14	m
Maximum hole depth	16.84	m
Minimum hole depth	9.66	m
Maximum subdrilling	-	m
Minimum subdrilling	-	m
Maximum stemming	2.00	m
Minimum stemming	1.80	m
Linear charge density "Explosive Type A"	5.70	kg/m
Linear charge density "Explosive Type B"	-	kg/m

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PORT SITE MASS EARTH WORKS

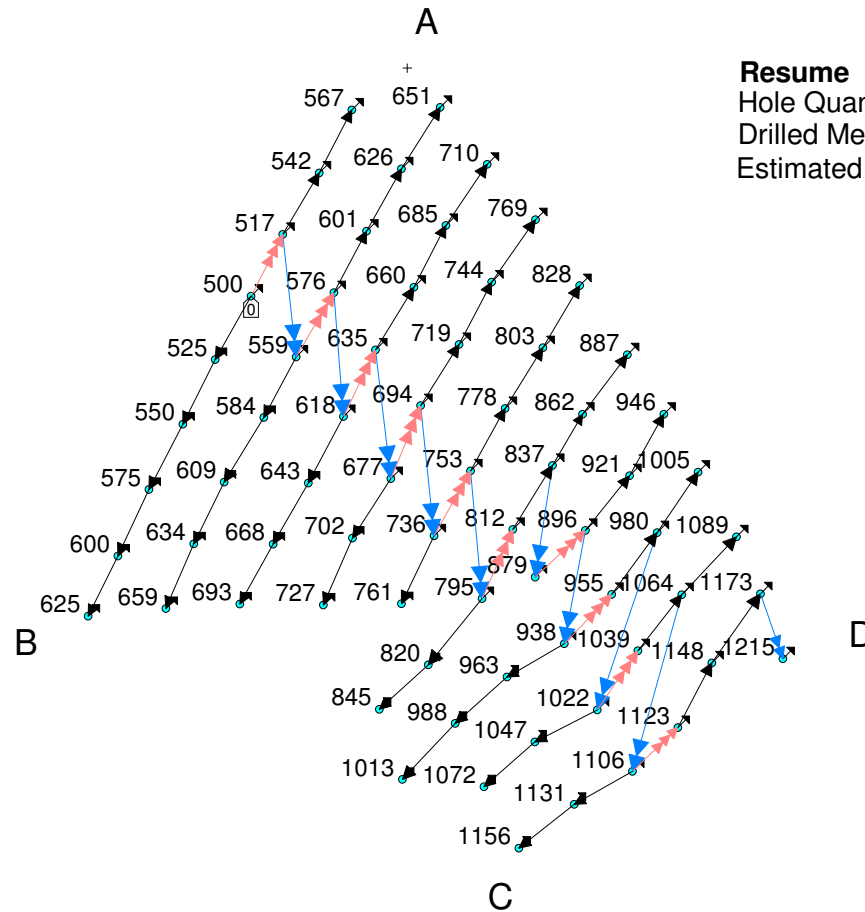
HOLA DEPTH and HOLE ID



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PORT SITE MASS EARTH WORKS

INHOLE NOMINAL TIMES



Resume

Hole Quantity = 70

Drilled Meters = 849.50 m

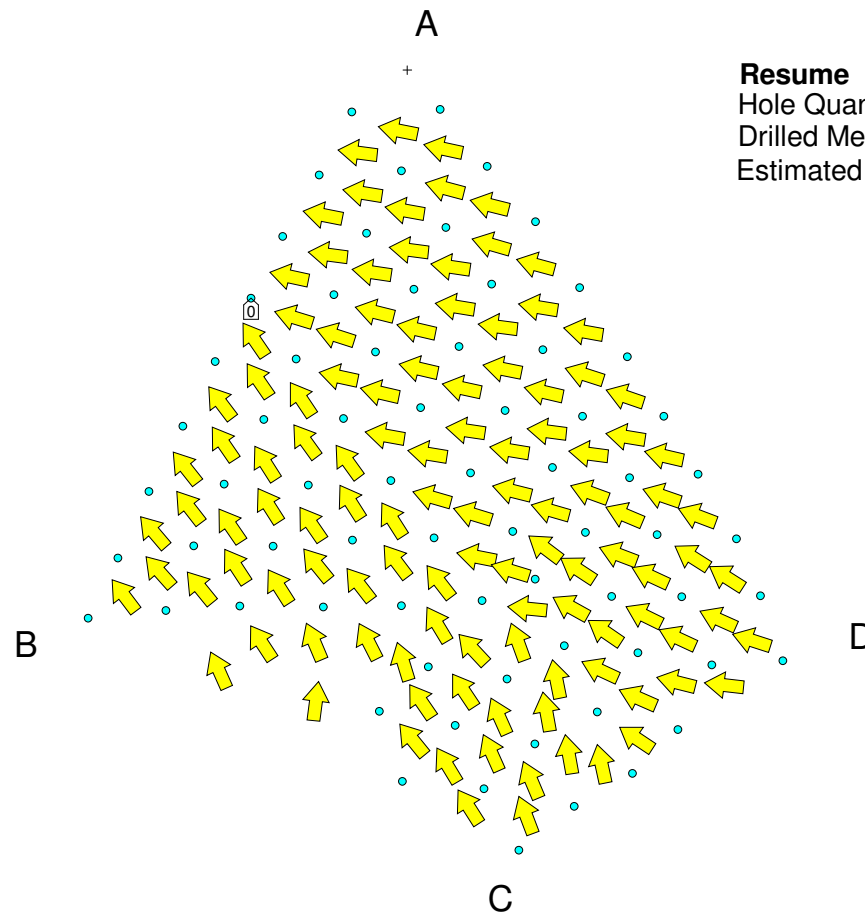
Estimated Volume = 7,645.59 m3

← EZ Det #25/500 (25)
 ← HTD #3 (42)
 ← HTD #1 (17)

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PORT SITE MASS EARTH WORKS

FIRST MOVEMENT



Resume

Hole Quantity = 70

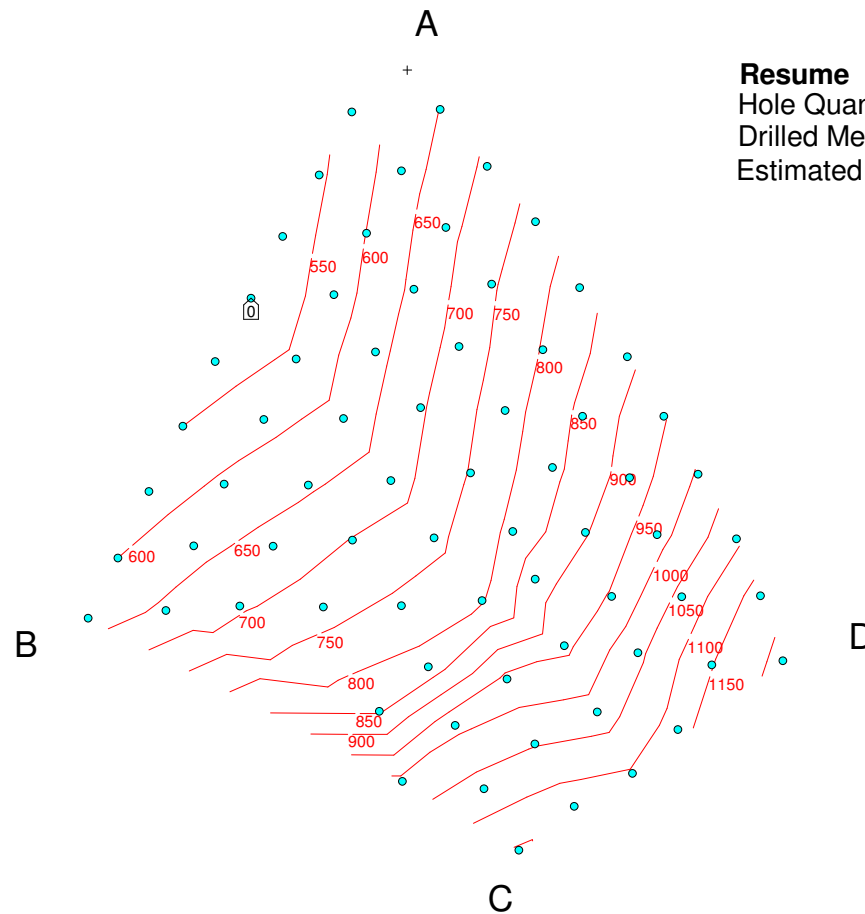
Drilled Meters = 849.50 m

Estimated Volume = 7,645.59 m³

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PORT SITE MASS EARTH WORKS

ANGLE OF INITIATION



Resume

Hole Quantity = 70

Drilled Meters = 849.50 m

Estimated Volume = 7,645.59 m³